

**Amendments to the Specification:**

Please replace the paragraphs at page 10, lines 7-15, with the following amended paragraphs:

FIG. 4 is a diagram showing an emission spectrum of 3-[N-(4-diphenylaminophenyl)-N-phenylamino]-9-phenylcarbazol 3-[N-(4-diphenylaminophenyl)-N-phenylamino]-9-phenylcarbazole which is a ~~carbazol~~ carbazole derivative according to the present invention;

FIG. 5 is a diagram showing an absorption spectrum of ~~3,6-bis[N-(4-diphenylaminophenyl)-N-phenylamino]-9-phenylcarbazol~~ 3,6-bis[N-(4-diphenylaminophenyl)-N-phenylamino]-9-phenylcarbazole which is a ~~carbazol~~ carbazole derivative according to the present invention;

FIG. 6 is a diagram showing an emission spectrum of ~~3,6-bis[N-(4-diphenylaminophenyl)-N-phenylamino]-9-phenylcarbazol~~ 3,6-bis[N-(4-diphenylaminophenyl)-N-phenylamino]-9-phenylcarbazole which is a ~~carbazol~~ carbazole derivative according to the present invention;

Please replace the paragraphs at page 10, line 26, to page 11, line 19, with the following amended paragraphs:

FIG. 13 is a chart of <sup>1</sup>H NMR of 3-[N-(4-diphenylaminophenyl)-N-phenylamino]-9-phenylcarbazol 3-[N-(4-diphenylaminophenyl)-N-phenylamino]-9-phenylcarbazole which is a ~~carbazol~~ carbazole derivative according to the present invention;

FIG. 14 is a chart of <sup>1</sup>H NMR of 3-[N-(4-diphenylaminophenyl)-N-phenylamino]-9-phenylcarbazol 3-[N-(4-diphenylaminophenyl)-N-phenylamino]-9-phenylcarbazole which is a ~~carbazol~~ carbazole derivative according to the present invention;

FIG. 15 is a chart of  $^1\text{H}$  NMR of 3,6-bis[N-(4-diphenylaminophenyl)-N-phenylamino]-9-phenylcarbazol 3,6-bis[N-(4-diphenylaminophenyl)-N-phenylamino]-9-phenylcarbazole which is a ~~carbazol~~ carbazole derivative according to the present invention;

FIG. 16 is a chart of  $^1\text{H}$  NMR of 3,6-bis[N-(4-diphenylaminophenyl)-N-phenylamino]-9-phenylcarbazol 3,6-bis[N-(4-diphenylaminophenyl)-N-phenylamino]-9-phenylcarbazole which is a ~~carbazol~~ carbazole derivative according to the present invention;

FIG. 17 is a diagram showing an absorption spectrum of 3-[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazol 3-[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazole which is a ~~carbazol~~ carbazole derivative according to the present invention;

FIG. 18 is a diagram showing an emission spectrum of 3-[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazol 3-[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazole which is a ~~carbazol~~ carbazole derivative according to the present invention;

FIG. 19 is a diagram showing an absorption spectrum of 3,6-bis[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazol 3,6-bis[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazole which is a ~~carbazol~~ carbazole derivative according to the present invention;

FIG. 20 is a diagram showing an emission spectrum of 3,6-bis[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazol 3,6-bis[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazole which is a ~~carbazol~~ carbazole derivative according to the present invention;

Please replace the paragraphs at page 11, line 26, to page 12, line 7, with the following amended paragraphs:

FIG. 24 is a chart of  $^1\text{H-NMR}$  of 3-[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazol 3-[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazole;

FIG. 25 is a chart of  $^1\text{H-NMR}$  of 3-[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazol 3-[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazole;

FIG. 26 is a chart of  $^1\text{H-NMR}$  of 3,6-bis[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazol 3,6-bis[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazole;

FIG. 27 is a chart of  $^1\text{H-NMR}$  of 3,6-bis[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazol 3,6-bis[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazole;

FIG. 28 is a diagram showing the result of the CV measurement of 3-[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazol 3-[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazole;

FIG. 29 is a diagram showing the result of the CV measurement of 3,6-bis[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazol 3,6-bis[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazole;

Please replace the paragraph bridging pages 57 and 58 with the following amended paragraph:

627.64 mg (1.7 mmol) of 3-iodine-9-phenylcarbazol 3-iodine-9-phenylcarbazole,  
672.86 mg (2.0 mmol) of N-(4-diphenylaminophenyl)-N-phenylamine, 57.5 mg (0.1 mmol) of dibenzylideneacetonepalladium, and 335 mg (3.5 mmol) of sodium tert-

butoxide were put into a three-necked flask, and the atmosphere in the flask was replaced by nitrogen. 3.5 ml of dehydrated toluene was added thereto and degassing was carried out for 3 minutes. After adding 0.4 ml of tri-tert-butylphosphine (10 w% hexane solution), the flask was shaken lightly up and down to stir the content. The solution was heated and stirred at 80 °C for 10 minutes with irradiating by a microwave at 200 W. After the reaction, saturated aqueous solution of sodium chloride was added, and the extraction with 100 ml of ethyl acetate was carried out. Further, magnesium sulfate was added to remove moisture, and then, magnesium sulfate was removed by filtration. Filtrate was condensed and purified by silica gel column using a solution of ethyl acetate and hexane in a ratio of 1:1. Hexane was added to the purified solution, and recrystallization was carried out to obtain 650 mg of cream powder in a yield of 65 %. The NMR data are indicated below. <sup>1</sup>H NMR (300MHz, DMSO-d); δ=6.89-7.05 (m, 13H), 7.21-7.28 (m, 9H), 7.32-7.43 (m, 3H), 7.50-7.69 (m, 5H), 8.02(s, 1H), 8.14 (d, j=7.2, 1 H). In addition, FIG. 13 shows a chart of <sup>1</sup>H NMR, and FIG. 14 shows an enlarged view of the portion of 6.0 to 9.0 ppm in FIG. 13.

Please replace the paragraph beginning on page 59, line 16, with the following amended paragraph:

As an example of a carbazol carbazole derivative according to the present invention, a synthesis example of 3,6-bis[N-(4-diphenylaminophenyl)-N-phenylamino]-9-phenylcarbazol 3,6-bis[N-(4-diphenylaminophenyl)-N-phenylamino]-9-phenylcarbazole (abbreviation: PCzDPA2) represented by the structural formula (56) will be described.

Please replace the paragraph beginning on page 60, line 1, with the following amended paragraph:

A synthesis method of ~~3,6-diiodo-9-phenylcarbazol~~ 3,6-diiodo-9-phenylcarbazole is described. A synthesis scheme of ~~3,6-diiodo-9-phenylcarbazol~~ 3,6-diiodo-9-phenylcarbazole is shown in (A-6).

Please replace the paragraph beginning at page 60, line 15, with the following amended paragraph:

A synthesis method of ~~3,6-bis[N-(4-diphenylaminophenyl)-N-phenylamino]-9-phenylcarbazol~~ 3,6-bis[N-(4-diphenylaminophenyl)-N-phenylamino]-9-phenylcarbazole (abbreviation: PCzDPA2) is described. A synthesis scheme of PCzDPA2 is shown in (A-7).

Please replace the paragraph beginning at page 61, line 1, with the following amended paragraph:

A three-necked flask was charged with 5.44 g (11 mmol) of ~~3,6-diiodo-9-phenylcarbazol~~ 3,6-diiodo-9-phenylcarbazole, 9 g (27 mmol) of N-(4-diphenylaminophenyl)-N-phenylamine, 500 mg (0.87 mmol) of dibenzylideneacetonepalladium, and 3.35 g (35 mmol) of sodium tert-butoxide and the atmosphere in the flask was replaced by nitrogen. 100 ml of dehydrated toluene was added thereto and degassing was carried out for 3 minutes. After adding 4 ml of tri-tert-butylphosphine (10 w% hexane solution), the solution was stirred for 16 hours at 80 °C in an atmosphere of nitrogen. After the reaction, a saturated aqueous solution of sodium chloride was added and the solution was extracted with 200 ml of ethyl acetate. Magnesium sulfate was added thereto to remove moisture. Then, the solution was

filtered to remove magnesium sulfate. The filtrate was condensed and was added by drops to a solution of ethyl acetate and hexane in a ratio of 1:10 to be suspended. Supernatant liquid of the suspension was collected. Then the collected supernatant liquid was purified by silica gel column with the solvent of ethyl acetate and hexane in a ratio of 1:10 and was condensed to obtain cream-colored powder. Insoluble constituent of the suspension was purified using solvent of toluene and hexane in a ratio of 5:1 by a silica gel column to obtain cream-colored powder. Thus obtained cream-colored powder is the object and was 6.5 g in a yield of 75 % in total. The NMR data of the object are indicated below.  $^1\text{H}$  NMR (300MHz, DMSO-d);  $\delta$ =6.86-6.97 (m, 26H), 7.18-7.36 (m, 14H), 7.35 (d,  $j$ =9.0, 2H), 7.52-7.66 (m 5H), 7.99 (s, 2H). FIG. 15 shows a chart of  $^1\text{H}$  NMR and FIG. 16 shows an enlarged view of the portion from 6.0 to 9.0 ppm in FIG. 15.

Please replace the paragraph beginning on page 62, line 23, with the following amended paragraph:

In this example, a light emitting element having a ~~carbazol~~ carbazole derivative PCzDPA1 represented by the structural formula (28) and synthesized in Example 1 will be described with reference to FIG. 2.

Please replace the paragraph beginning at page 63, line 5, with the following amended paragraph:

The substrate provided with the first electrode 201 is fixed in a substrate holder in a commercially available vacuum vapor deposition equipment so that the surface provided with the first electrode 201 faces downward. The ~~carbazol~~ carbazole derivative according to the present invention is provided to a deposition source in the vacuum vapor deposition equipment to form the hole injecting layer 204 by a vapor

deposition method with a resistance heating method to have a thickness of 50 nm. As a material for forming the hole injecting layer 204, PCzDPA1 represented by the structural formula (28) is used in this example.

Please replace the paragraphs at page 64, lines 8-23, with the following amended paragraphs:

In the light emitting element of this example, a hole injection barrier can be reduced since a layer being in contact with the anode includes the ~~carbazol~~ carbazole derivative which is excellent in the hole injecting property. Consequently, the driving voltage is reduced and a light emitting element with improved reliability can be provided.

[Example 4]

In this example, a light emitting element having a ~~carbazol~~ carbazole derivative PCzDPA2 represented by the structural formula (56) will be described.

Like Example 3, an anode is formed by indium tin oxide containing silicon oxide to have a thickness of 110 nm, a hole injecting layer is formed by a ~~carbazol~~ carbazole derivative PCzDPA2 according to the present invention represented by the structural formula (56) to have a thickness of 50 nm, a hole transporting layer is formed by  $\alpha$ -NPD to have a thickness of 10 nm, and a light emitting layer is formed by Alq<sub>3</sub> and coumarin 6 to have a thickness of 40 nm including coumarin 6 in Alq<sub>3</sub> at 1 wt% over a substrate. Then, an electron transporting layer is formed by Alq<sub>3</sub> to have a thickness of 30 nm, an electron injecting layer is formed by calcium fluoride to have a thickness of 1 nm, and a cathode is formed by Al to have a thickness of 200 nm.

Please replace the paragraph beginning on page 65, line 10, with the following amended paragraph:

According to FIGs. 7 and 8, it can be said that a driving voltage for obtaining light emission at the certain luminance from a light emitting element having the ~~carbazol~~ carbazole derivative according to the present invention can be reduced. Specifically, voltage required for luminance of  $1000 \text{ cd/m}^2$  was 6.0 V in the case of the light emitting element manufactured in Example 3 and an electric current density at this time was  $8.5 \text{ mA/cm}^2$ . Similarly, voltage required for luminance of  $1000 \text{ cd/m}^2$  was 5.8 V in the case of the light emitting element manufactured in Example 4 and an electric current density at this time was  $8.2 \text{ mA/cm}^2$ . In the case of the light emitting element manufactured in Comparative Example 1, a required voltage was 6.6 V and an electric current density at this time was  $11.0 \text{ mA/cm}^2$ . That is, low voltage driving and low current driving can be realized by using the ~~carbazol~~ carbazole derivative according to the present invention for a light emitting element.

Please replace the paragraph bridging pages 65 and 66, with the following amended paragraph:

According to FIG. 9, the luminance of the light emitting element manufactured in Example 3 is not reduced over time as much as that of the light emitting element manufactured in Comparative Example 1. Further, according to FIG. 10, in the light emitting element manufactured in Example 3, the voltage hardly increases over time. Therefore, the light emitting element having the ~~carbazol~~ carbazole derivative according to the present invention has a long life time and improved reliability.

Please replace the paragraphs at page 66, lines 3-25, with the following amended paragraphs:



As shown in Example 1 and Example 2, HOMO level of PCzDPA1 represented by the structural formula (28) is -5.16 eV and HOMO level of PCzDPA2 represented by the structural formula (56) is -5.16 eV. On the other hand, HOMO level of DNTPD shown in Comparative Example is -5.15 eV which is approximately same as that of PCzDPA1 and PCzDPA2 as measured by the same method. Consequently, the carbazol carbazole derivative according to the present invention has an approximately same hole injecting property as that of DNTPD. Therefore, a hole injection barrier against the anode can be reduced, and so the driving voltage can be reduced.

Further, a result of the measurement shows that a driving voltage of the light emitting element having the carbazol carbazole derivative according to the present invention can be lower than that of the light emitting element having DNTPD. It is because that the carbazol carbazole derivative according to the present invention is superior to the DNTPD in terms of the hole transporting property. As the hole transporting property of the layer is improved, carriers can be easily moved in the layer containing the light emitting material. Therefore a driving voltage of the light emitting element having the carbazol carbazole derivative can be lowered than that of the light emitting element having DNTPD.

Further, a life of the light emitting element according to the present invention is longer than that of the light emitting element having DNTPD. The carbazol carbazole derivative according to the present invention has high LUMO level, and a high electron injection barrier. That leads to prevent electrons from going into an anode side. Therefore, the probability of recombination of carriers becomes high and luminous efficiency is improved. That is, current required to realize light emission at the certain luminance is lowered, and so a low current driving can be realized.

Please replace the paragraph beginning on page 67 line 2, with the following amended paragraph:

In this example, a light emitting element having a ~~carbazol~~ carbazole derivative according to the present invention as a hole injecting material and as a hole transporting material will be described.

Please replace the paragraph beginning on page 67, line 7, with the following amended paragraph:

A layer which functions as both of a hole injecting layer and a hole transporting layer is formed by the ~~carbazol~~ carbazole derivative PCzDPA1 according to the present invention represented by the structural formula (28) to have a thickness of 60 nm, and a light emitting layer is formed by Alq<sub>3</sub> and coumarin 6 to have a thickness of 40 nm including coumarin 6 in Alq<sub>3</sub> at 1 wt%. Then an electron transporting layer is formed by Alq<sub>3</sub> to have a thickness of 30 nm, an electron injecting layer is formed by calcium fluoride to have a thickness of 1 nm, and a cathode is formed by Al to have a thickness of 200 nm.

Please replace the paragraphs at page 67, lines 15-25, with the following amended paragraphs:

In the light emitting element according to the present invention, a hole injection barrier against the anode can be reduced since a layer being in contact with the anode includes a ~~carbazol~~ carbazole derivative which is excellent in a hole injecting property. Consequently, the driving voltage can be reduced.

Since the ~~carbazol~~ carbazole derivative according to the present invention is excellent in the hole transporting property, a driving voltage can be further lowered by

using the ~~carbazol~~ carbazole derivative for a hole transporting layer of the light emitting element. The ~~carbazol~~ carbazole derivative according to the present invention has an effect of preventing electron from going into an anode side. Therefore, the probability of recombination of carriers becomes high and luminous efficiency is improved. As a result, a light emitting element with improved reliability can be realized.

Please replace the paragraph beginning on page 69, line 14, with the following amended paragraph:

As an example of the ~~carbazol~~ carbazole derivative according to the present invention, a synthesis example of the ~~3-[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazol~~ 3-[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazole (abbreviation: PCzDPN1) represented by the structural formula (33) will be described.

Please replace the paragraph beginning on page 71, line 1, with the following amended paragraph:

A synthesis method of ~~3-[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazol~~ 3-[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazole (abbreviation: PCzTPN1) is described. A synthesis scheme of ~~3-[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazol~~ 3-[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazole (abbreviation: PCzTPN1) is described in (A-9).

Please replace the paragraph bridging pages 71 and 72, with the following amended paragraph:

A flask was charged with 740 mg (2.0 mmol) of ~~3-iodo-9-phenylcarbazol~~ 3-iodo-9-phenylcarbazole, 700 mg (1.8 mmol) of N-(4-diphenylaminophenyl)-N-(1-naphthyl)amine, 12 mg (0.02 mmol) of dibenzylideneacetonepalladium, and 600 mg (6.0 mmol) of sodium tert-butoxide and the atmosphere in the flask was replaced by nitrogen. 5 ml of dehydrated xylene was added thereto and degassing was carried out for 3 minutes. After 0.1ml (0.05 mmol) of tri-tert-butylphosphine (10 w% hexane solution) was added thereto, the solution was stirred for 5.5 hours at 90 °C in an atmosphere of nitrogen. Toluene of approximately 100 ml was added thereto and the solution is filtered through florisil, alumina, and celite. The obtained filtrate was washed with water and a saturated aqueous solution of sodium chloride. The organic layer was dried by magnesium sulfate. The obtained material was filtered, and condensed, then, purified by silica gel column chromatography (toluene and hexane in a ratio of 3:7). The obtained solution was condensed. Then, hexane was added thereto and the object was precipitated by using an ultra sonic washing machine. The obtained solid was filtered to obtain 500 mg of PCzTPN1 as yellow powder in a yield of 44 %. The NMR data of the object are indicated below. <sup>1</sup>H NMR (300MHz, DMSO-d); δ= 6.74 (d, j=8.7, 2H), 6.88-7.00 (m, 8H), 7.16-7.67 (m, 23H), 7.84 (d, j=8.4, 1H), 7.97 (d, j=8.1, 1H), 8.02 (s, 1H), 8.08 (t, j=7.8, 2H). FIG. 24 shows chart of <sup>1</sup>H NMR and FIG. 25 shows an enlarged view of the portion from 6.0 to 8.5 ppm in FIG. 24.

Please replace the paragraph beginning on page 73, line 1, with the following amended paragraph:

A synthesis method of ~~3,6-bis[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazol~~ 3,6-bis[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazole (abbreviation: PCzTPN2) represented by a structural formula (61) will be described.

Please replace the paragraph beginning on page 73, line 8, with the following amended paragraph:

A synthesis scheme of ~~3,6-bis[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazol~~ 3,6-bis[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazole (abbreviation: PCzTPN2) is described in (A-10).

Please replace the paragraph bridging pages 73 and 74 with the following amended paragraph:

A flask was charged with 740 mg (1.5 mmol) of ~~3,6-diiodo-9-phenylcarbazol~~ 3,6-diiodo-9-phenylcarbazole, 1.2 g (3 mmol) of N-(4-diphenylaminophenyl)-N-(1-naphthyl)amine, 18 mg (0.03 mmol) of dibenzylideneacetonepalladium, and 1.0 g (10 mmol) of sodium tert-butoxide, and the atmosphere in the flask was replaced by nitrogen. 7.5 ml of dehydrated xylene was added thereto and degassing was carried out for 3 minutes. After 0.2 ml (0.1 mmol) of tri-tert-butylphosphine (10 w% hexane solution) was added thereto, the solution was stirred for 7 hours at 90 °C in an atmosphere of nitrogen. Toluene of approximately 300 ml was added thereto and the solution was filtered through florisil, alumina, and celite. The obtained filtrate was washed with water and a saturated aqueous solution of sodium chloride. The organic

layer was dried by magnesium sulfate. The obtained material was filtered, and condensed, then, purified by silica gel column chromatography (toluene and hexane in a ratio of 3:7). The obtained solution was condensed. Then, hexane was added thereto and the object was precipitated by using an ultra sonic washing machine. The obtained solid was filtered to obtain 1.0 mg of PCzTPN2 as yellow powder in a yield of 66 %. The NMR data of the object are indicated below. <sup>1</sup>H NMR (300MHz, DMSO-d); δ=6.68 (d, j=9.0, 4H), 6.86-6.97 (m, 16H), 7.20-6.97 (m, 16H), 7.20-7.65 (m, 25H), 7.83 (d, j=8.1, 2H), 7.95-7.98 (m, 4H), 8.05 (d, j=8.4, 2H). FIG. 26 shows a chart of <sup>1</sup>H NMR and FIG. 27 shows an enlarged view of the portion from 6.0 to 8.5 ppm in FIG. 26.

Please replace the paragraph beginning on page 75 line 14, with the following amended paragraph:

In this example, an oxidation reaction property of 3-[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazol 3-[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazole (abbreviation: PCzTPN1) which is represented by the structural formula (33) was measured by cyclic voltammetry (CV) measurement using an electrochemical analyzer (manufactured by BAS Inc., ALS model 600A).

Please replace the paragraphs at page 76, lines 11-20, with the following amended paragraphs:

FIG. 28 shows that the oxidation potential was 0.20 V (vs. Ag/Ag<sup>+</sup> electrode). After the 100 cycles of scanning were carried out, the peak position and the peak intensity of the CV carve hardly changed. Therefore, it can be said that a carbazol carbazole derivative according to the present invention is quite stable of oxidation reaction.

[Example 10]

In this example, an oxidation reaction property of 3,6-bis[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazol 3,6-bis[N-(4-diphenylaminophenyl)-N-(1-naphthyl)amino]-9-phenylcarbazole (abbreviation: PCzTPN2) which is represented by the structural formula (61) was measured by cyclic voltammetry (CV) measurement using the electrochemical analyzer (manufactured by BAS Inc., ALS model 600A).

Please replace the paragraphs at page 77, lines 13-20, with the following amended paragraphs:

FIG. 29 shows that the oxidation potential was 0.22 V (vs. Ag/Ag<sup>+</sup> electrode). After the 100 cycles of scanning were carried out, the peak position and the peak intensity of the CV curve hardly changed. Therefore, it can be said that a carbazol carbazole derivative according to the present invention is quite stable of oxidation reaction.

[Example 11]

In this example, a light emitting element having a carbazol carbazole derivative PCzDPA1 represented by the structural formula (28) and synthesized in Example 1 will be described with reference to FIG. 30.

Please replace the paragraphs at page 79, lines 1-12, with the following amended paragraphs:

In this example, a light emitting element having the carbazol carbazole derivative PCzDPA2 represented by the structural formula (56) will be described.

Like Example 9, an anode is formed using indium tin oxide containing silicon oxide to have a thickness of 110 nm, a hole injecting layer is formed using DNTPD to have a thickness of 50 nm, a hole transporting layer is formed using the carbazol

carbazole derivative PCzDPA2 according to the present invention represented by the structural formula (56) to have a thickness of 50 nm, a light emitting layer is formed using Alq<sub>3</sub> and coumarin 6 so that the weight ratio can be 1:0.08 (=Alq<sub>3</sub>:coumarin 6) to have a thickness of 40 nm over a substrate. Then, an electron transporting layer is formed using Alq<sub>3</sub> to have a thickness of 30 nm, an electron injecting layer is formed using calcium fluoride to have a thickness of 1 nm, and a cathode is formed using Al to have a thickness of 200 nm.

Please replace the paragraph beginning on page 79, line 19, with the following amended paragraph:

According to FIGs. 31 and 32, the ~~carbazol~~ carbazole derivative according to the present invention is excellent in the hole transporting property and can be used for a hole transporting layer of a light emitting element. Specifically, in the case of the light emitting element manufactured in Example 11, voltage required for light emission at luminance of 1054 cd/m<sup>2</sup> was 8.2 V and a current at this time was 0.82 mA (an electric current density was 20.5 mA/cm<sup>2</sup>). Current efficiency was 5.15 mA/cm<sup>2</sup> and the chromaticity coordinates were (x, y) = (0.30, 0.64). Similarly, in the case of the light emitting element manufactured in Example 12, a voltage required for luminance of 963 cd/m<sup>2</sup> was 8.4 V and a current at this time was 0.80 mA (an electric current density was 19.9 mA/cm<sup>2</sup>). Current efficiency was 4.8 mA/cm<sup>2</sup> and the chromaticity coordinates were (x, y) = (0.30, 0.64).

Please replace the paragraph bridging pages 79 and 80, with the following amended paragraph:

As shown in FIG. 33, light emission is hardly observed from the hole transporting layer and an electron transporting layer which are in contact with the light emitting layer



but is observed from coumarin 6 of the light emitting layer. That is, carriers are recombined with each other in the light emitting layer efficiently. By using the carbazol carbazole derivative according to the present invention, a light emitting element with improved carrier balance can be manufactured.

Please replace the paragraph beginning on page 80, line 7, with the following amended paragraph:

In this example, a light emitting element having a carbazol carbazole derivative PCzDPA2 represented by the structural formula (56) will be described with reference of FIG. 34.

Please replace the paragraph bridging pages 81 and 82, with the following amended paragraph:

According to FIGs. 35 and 36, the ~~carbazol~~ carbazole derivative according to the present invention can be used as a guest material of the light emitting layer. Specifically, in the case of the light emitting element manufactured in Example 13, voltage required for light emission at luminance of 615 cd/m<sup>2</sup> was 8.2 V and a current at this time was 1.51 mA (an electric current density was 30.3 mA/cm<sup>2</sup>). Current efficiency was 1.62 mA/cm<sup>2</sup> and the chromaticity coordinates were (x, y) = (0.16, 0.12).

Please replace the paragraphs at page 82, lines 2-9, with the following amended paragraphs:

As shown in FIG. 37, the light emitting element manufactured in Example 13 has a sharp emission spectrum. Consequently, a light emitting element which emits blue

light can be manufactured by using the ~~carbazon~~ carbazole derivative according to the present invention as a light emitting material.

[Example 14]

In this example, a light emitting element having a ~~carbazon~~ carbazole derivative PCzDPA2 represented by the structural formula (56) will be described with reference of FIG. 34.

Please replace the paragraph bridging pages 83 and 84, with the following amended paragraph:

According to FIGs. 38 and 39, the ~~carbazon~~ carbazole derivative according to the present invention can be used as a guest material of the light emitting layer. Specifically, in the case of the light emitting element manufactured in Example 14, voltage required for light emission at luminance of  $494 \text{ cd/m}^2$  was 8.0 V and a current at this time was 1.34 mA (an electric current density was  $33.5 \text{ mA/cm}^2$ ). Current efficiency was  $1.47 \text{ mA/cm}^2$  and the chromaticity coordinates were (x, y) = (0.16, 0.12).

Please replace the paragraph beginning on page 84, line 3, with the following amended paragraph:

As shown in FIG. 40, the light emitting element manufactured in Example 14 has a sharp emission spectrum. Consequently, a light emitting element which emits blue light can be manufactured by using the ~~carbazon~~ carbazole derivative according to the present invention as a light emitting material.

Please replace the Abstract of the original specification with the attached replacement abstract. The replacement abstract is provided on a separate sheet per 37 CFR § 1.72.